What Is Claimed Is:

1. A method for manipulating a window within a three-dimensional (3D) display model, comprising:

receiving an input from a 2D pointing device, wherein the input specifies a 2D offset within a 2D display, wherein the 2D display provides a view into the 3D display model;

using the 2D offset to move a cursor to a position in the 2D display;

determining if the cursor overlaps a window within the 3D display model; and

if the cursor overlaps a window,

determining a 2D position of the cursor with respect to a 2D coordinate system for the window, and

communicating the 2D position to an application associated with the window to enable a user of the 2D pointing device to interact with the application.

2. The method of claim 1, wherein determining if the cursor overlaps a window within the 3D display model involves:

projecting a ray from a predefined viewpoint in the 3D display model through the cursor, which is located in a rectangle representing the 2D display in the 3D display model, toward one or more windows in the 3D display model; and

determining if the ray intersects a window.

3. The method of claim 2, wherein determining the 2D position of the cursor with respect to the 2D coordinate system of the window involves:

determining a 3D position where the ray intersects the window within the 3D display model; and

transforming the 3D position in the 3D display model into a 2D position with respect to the 2D coordinate system for the window based upon the size, position and orientation of the window within the 3D display model.

4. The method of claim 3, wherein the size, position and orientation of the window within the 3D display model are specified by a number of attributes of the window, including:

a height;

a width;

an *x*-position;

a *y*-position;

a *z*- position;

a first rotation around a vertical axis of the window; and

a second rotation around a horizontal axis of the window.

5. The method of claim 1, further comprising:

receiving a second input from the 2D pointing device; and

in response to the second input, changing a viewing angle for the 3D display model by rotating objects within the 3D display model around a predefined viewpoint.

6. The method of claim 1, wherein if the cursor overlaps a given window, the given window becomes a selected window and appears opaque while other windows within the 3D display model appear translucent.

7. The method of claim 1, wherein if a command is received to minimize a window, the window minimization operation is illustrated as an animation that moves the window toward a minimized position near a border of the 2D display while reducing the size of the window to its minimized size.

8. The method of claim 1, wherein if a command is received to close a window, the window closing operation is illustrated as an animation that throws the window away by moving the window toward the background of the 3D display model and causing the window to fade away.

9. The method of claim 1, wherein if a command is received to rotate all windows in the 3D display model, the method further comprises rotating all windows in the 3D display model, so that windows are viewed from an oblique angle through the 2D display, whereby the contents of the windows remain visible, while the windows occupy less space in the 2D display and are less likely to overlap each other.

10. The method of claim 9, wherein when a window is rotated, a spine located on a side edge of the window becomes visible, wherein the spine contains identification information for the window.

11. The method of claim 9, wherein when a user selects one of the rotated windows, the method further comprises:

moving the selected window in front of the other windows;

unrotating the selected window so it faces the user; and

moving the other windows back to their original positions and orientations.

12. The method of claim 1, wherein the 2D pointing device can include:

a mouse;

a track ball;

a joystick; and

a glide point.

13. A computer-readable storage medium storing instructions that when executed by a computer cause the computer to perform a method for manipulating a two-dimensional (2D) window within a three-dimensional (3D) display model, the method comprising:

receiving an input from a 2D pointing device, wherein the input specifies a 2D offset within a 2D display, wherein the 2D display provides a view into the 3D display model;

using the 2D offset to move a cursor to a position in the 2D display;

determining if the cursor overlaps a window within the 3D display model; and

if the cursor overlaps a window,

determining a 2D position of the cursor with respect to a 2D coordinate system for the window, and

communicating the 2D position to an application associated with the window to enable a user of the 2D pointing device to interact with the application.

14. The computer-readable storage medium of claim 13, wherein determining if the cursor overlaps a window within the 3D display model involves:

projecting a ray from a predefined viewpoint in the 3D display model through the cursor, which is located in a rectangle representing the 2D display in the 3D display model, toward one or more windows in the 3D display model; and

determining if the ray intersects a window.

15. The computer-readable storage medium of claim 14, wherein determining the 2D position of the cursor with respect to the 2D coordinate system of the window involves:

determining a 3D position where the ray intersects the window within the 3D display model; and

transforming the 3D position in the 3D display model into a 2D position with respect to the 2D coordinate system for the window based upon the size, position and orientation of the window within the 3D display model.

16. The computer-readable storage medium of claim 15, wherein the size, position and orientation of the window within the 3D display model are specified by a number of attributes of the window, including:

a height;

a width;

an *x*-position;

a *y*-position;

a *z*- position;

a first rotation around a vertical axis of the window; and

a second rotation around a horizontal axis of the window.

17. The computer-readable storage medium of claim 13, wherein the method further comprises:

receiving a second input from the 2D pointing device; and

in response to the second input, changing a viewing angle for the 3D display model by rotating objects within the 3D display model around a predefined viewpoint.

18. The computer-readable storage medium of claim 13, wherein if the cursor overlaps a given window, the given window becomes a selected window and appears opaque while other windows within the 3D display model appear translucent.

19. The computer-readable storage medium of claim 13, wherein if a command is received to minimize a window, the window minimization operation is illustrated as an animation that moves the window toward a minimized position near a border of the 2D display while reducing the size of the window to its minimized size.

20. The computer-readable storage medium of claim 13, wherein if a command is received to close a window, the window closing operation is illustrated as an animation that throws the window away by moving the window toward the background of the 3D display model and causing the window to fade away.

21. The computer-readable storage medium of claim 13, wherein if a command is received to rotate all windows in the 3D display model, the method

further comprises rotating all windows in the 3D display model, so that windows are viewed from an oblique angle, whereby the contents of the windows remain visible, while the windows occupy less space in the 2D display and are less likely to overlap each other.

22. The computer-readable storage medium of claim 21, wherein when a window is rotated, a spine located on a side edge of the window becomes visible, wherein the spine contains identification information for the window.

23. The computer-readable storage medium of claim 21, wherein when a user selects one of the rotated windows, the method further comprises:

moving the selected window in front of the other windows;

unrotating the selected window so it faces the user; and

moving the other windows back to their original positions and orientations.

24. The computer-readable storage medium of claim 13, wherein the 2D pointing device can include:

a mouse;

a track ball;

a joystick; and

a glide point.

25. An apparatus that manipulates a two-dimensional (2D) window within a three-dimensional (3D) display model, comprising:

an input mechanism configured to receive an input from a 2D pointing device, wherein the input specifies a 2D offset within a 2D display, wherein the 2D display provides a view into the 3D display model;

a cursor mechanism configured to use the 2D offset to move a cursor to a position in the 2D display; and

a window manipulation mechanism configured to determine if the cursor overlaps a window within the 3D display model;

wherein if the cursor overlaps a window, the window manipulation mechanism is configured to,

determine a 2D position of the cursor with respect to a 2D coordinate system for the window, and to

communicate the 2D position to an application associated with the window to enable a user of the 2D pointing device to interact with the application.

26. The apparatus of claim 25, wherein while determining if the cursor overlaps a window within the 3D display model, the window manipulation mechanism is configured to:

project a ray from a predefined viewpoint in the 3D display model through the cursor, which is located in a rectangle representing the 2D display in the 3D display model, toward one or more windows in the 3D display model; and to

determine if the ray intersects a window.

27. The apparatus of claim 26, wherein while determining the 2D position of the cursor with respect to the 2D coordinate system of the window, the window manipulation mechanism is configured to:

determine a 3D position where the ray intersects the window within the 3D display model; and to

transform the 3D position in the 3D display model into a 2D position with respect to the 2D coordinate system for the window based upon the size, position and orientation of the window within the 3D display model.

28. The apparatus of claim 27, wherein the size, position and orientation of the window within the 3D display model are specified by a number of attributes of the window, including:

a height;

a width;

an *x*-position;

a *y*-position;

a *z*- position;

a first rotation around a vertical axis of the window; and

a second rotation around a horizontal axis of the window.

29. The apparatus of claim 25, further comprising a viewing angle changing mechanism configured to:

receive a second input from the 2D pointing device; and

in response to the second input, to change a viewing angle for the 3D display model by rotating objects within the 3D display model around a predefined viewpoint.

30. The apparatus of claim 25, wherein if the cursor overlaps a given window, the window manipulation mechanism is configured to make the given a

selected window that appears opaque while other windows within the 3D display model appear translucent.

31. The apparatus of claim 25, wherein if a command is received to minimize a window, the window manipulation mechanism is configured to illustrate the minimization operation as an animation that moves the window toward a minimized position near a border of the 2D display while reducing the size of the window to its minimized size.

32. The apparatus of claim 25, wherein if a command is received to close a window, the window manipulation mechanism is configured to illustrate the window closing operation as an animation that throws the window away by moving the window toward the background of the 3D display model and causing the window to fade away.

33. The apparatus of claim 25, wherein if a command is received to rotate all windows in the 3D display model, the window manipulation mechanism is configured to rotate all windows in the 3D display model, so that windows are viewed from an oblique angle through the 2D display, whereby the contents of the windows remain visible, while the windows occupy less space in the 2D display and are less likely to overlap each other.

34. The apparatus of claim 33, wherein when a window is rotated, a spine located on a side edge of the window becomes visible, wherein the spine contains identification information for the window.

35. The apparatus of claim 33, wherein when a user selects one of the rotated windows, the window manipulation mechanism is configured to:

move the selected window in front of the other windows;

unrotate the selected window so it faces the user; and to

move the other windows back to their original positions and orientations.

36. The apparatus of claim 25, wherein the 2D pointing device can include:

a mouse;

a track ball;

a joystick; and

a glide point.

37. A means for manipulating a two-dimensional (2D) window within a three-dimensional (3D) display model, comprising:

an input means for receiving an input from a 2D pointing device, wherein the input specifies a 2D offset within a 2D display, wherein the 2D display provides a view into the 3D display model;

a cursor means configured to use the 2D offset to move a cursor to a position in the 2D display; and

a window manipulation means configured to determine if the cursor overlaps a window within the 3D display model;

wherein if the cursor overlaps a window, the window manipulation means is configured to,

determine a 2D position of the cursor with respect to a 2D coordinate system for the window, and to

communicate the 2D position to an application associated with the window to enable a user of the 2D pointing device to interact with the application.